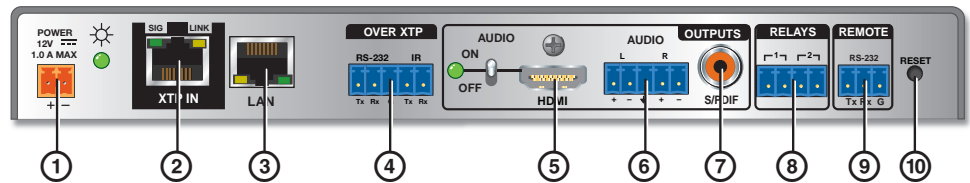




**IMPORTANT:**  
Refer to [www.extron.com](http://www.extron.com) for the complete user guide and installation instructions before connecting the product to the power source.

# XTP SR HDMI • Setup Guide

The Extron XTP SR HDMI is an XTP receiver that scales HDMI, DVI, RGB, HD component video, and standard definition video to the optimal output resolution. This guide provides instructions for an experienced installer to install and connect the XTP SR HDMI scaling receiver.



## Installation

### Rear Panel Features

Power and Throughput Connections	Output Connections	Control Connections and Reset
<ul style="list-style-type: none"> <li>① DC power connector and power LED</li> <li>② XTP input connector and Sig and Link LEDs</li> <li>③ LAN connector and LEDs</li> <li>④ RS-232/IR Over XTP connector</li> </ul>	<ul style="list-style-type: none"> <li>⑤ HDMI output connector and corresponding HDMI audio switch</li> <li>⑥ Analog audio output connector</li> <li>⑦ S/DPDIF digital audio output connector</li> </ul>	<ul style="list-style-type: none"> <li>⑧ Relay connectors</li> <li>⑨ Remote RS-232 connector</li> <li>⑩ Reset button</li> </ul>

### Mounting and Cabling

#### Step 1 – Mounting

Turn off or disconnect all equipment power sources and mount the XTP SR HDMI as required.

#### Step 2 – Connecting Outputs

- a. Connect a digital video display to the female HDMI connector (see ⑤ above).
- b. Connect a balanced or unbalanced, stereo or mono audio output device to the 3.5 mm, 5-pole captive screw connector (see ⑥ above) for 2-channel stereo analog audio (for wiring details, see [Audio Wiring](#) on page 2).
- c. Connect an audio device to the female orange RCA connector for digital S/DPDIF audio output (see ⑦ above).

#### Step 3 – Connecting Throughput Devices

- a. Connect a twisted pair cable between the XTP input connector of the XTP SR HDMI (see ② above) and the XTP output connector on an XTP transmitter or XTP matrix switcher. For cable recommendations, see [Twisted Pair Recommendations for XTP Communication](#) on page 2.

**ATTENTION:** Do not connect this connector to a computer data or telecommunications network.

**Sig LED** – Lights when it receives an active XTP input signal from the transmitter or matrix switcher.

**Link LED** – Lights when a valid XTP link is established.

- b. To pass bidirectional serial, infrared, or other control signals, connect a control device or a device to be controlled to the RS-232 and IR Over XTP connector (see ④ above).

**NOTE:** RS-232 and IR data can be transmitted simultaneously (see [RS-232 and IR Over XTP Wiring](#) on page 2).

- d. Connect a host device or control LAN or WAN to the LAN RJ-45 connector for pass-through 10/100Base-T Ethernet communication (see ③ above). This is an Ethernet pass-through port with LEDs to indicate link and activity status.

#### Step 4 – Connecting Control Devices

- a. Connect a host device, such as a computer, to the female mini-USB B port on the front panel to configure the receiver or update firmware (see ② on page 2).
- b. Connect equipment that can be controlled via momentary or latching contact, such as projector screens or lifts, to these normally open relays (see ⑧ above). Do not exceed 24 V at 1 A for each port.
- c. For serial RS-232 control of the receiver, connect a host device to the Remote RS-232 3.5 mm, 3-pole captive screw connector (see ⑨ above).

#### Step 5 – Connecting Power

Power the XTP SR HDMI in one of the following methods:

- Connect the provided external 12 V, 1.0 A power supply to the 2-pole captive screw connector for local power (see ① above).
- Connect an XTP Power Injector to the XTP connection between the XTP SR HDMI and a locally powered XTP transmitter or XTP matrix switcher (see the *XTP Power Injector User Guide* for more details).
- Connect the XTP SR HDMI to an XTP matrix switcher and enable the remote power feature on the XTP matrix switcher.

**ATTENTION:** XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors.

# XTP SR HDMI • Setup Guide (Continued)

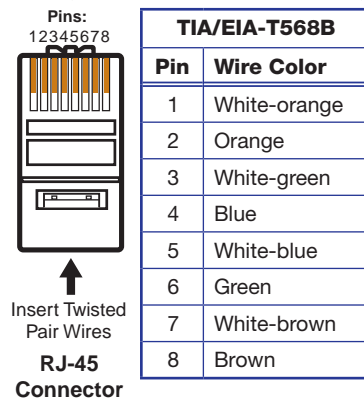
## Twisted Pair Recommendations for XTP Communication

The XTP SR HDMI is compatible with CAT 5e, 6, 6a, and 7 shielded twisted pair (F/UTP, SF/UTP, and S/FTP) and unshielded twisted pair (U/UTP) cable. Extron recommends using the following practices to achieve full transmission distances up to 330 feet (100 m) and reduce transmission errors.

- Use Extron XTP DTP 24 SF/UTP cable for the best performance. If not using XTP DTP 24 cable, at a minimum, Extron recommends 23 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA-T568B standard.
- Limit the use of more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use CAT 6 or 6a shielded couplers and punch down connectors.

**NOTE:** When using CAT 5e or CAT 6 cable in bundles or conduits, consider the following:

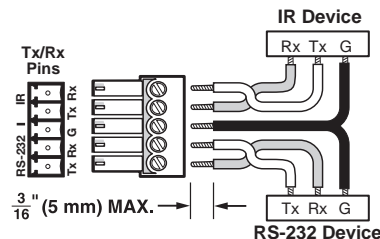
- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 m, where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the use of tie wraps or hook and loop fasteners.
- Separate twisted pair cables from AC power cables.



## RS-232 and IR Over XTP Wiring

To pass bidirectional serial command signals between XTP-compatible devices, connect a control device to the three leftmost poles (Tx, Rx, and G) of the 5-pole captive screw connector. To transmit and receive IR signals, connect a control device to the three rightmost poles (G, Tx, and Rx).

**NOTE:** RS-232 and IR data can be transmitted or received simultaneously.

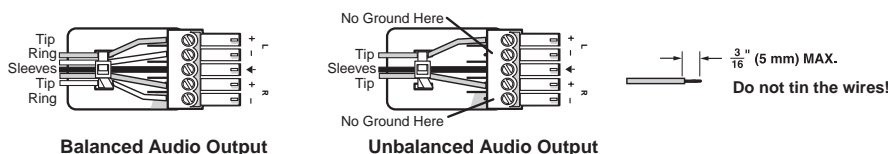


## Audio Wiring

Wire the audio output connector as shown to the right. Use the supplied tie-wrap to strap the audio cable to the extended tail of the connector.

**ATTENTION:** For unbalanced outputs, do not connect wires to the "-" poles.

**NOTE:** The length of exposed wires is critical. The ideal length is 3/16 inch (5 mm).

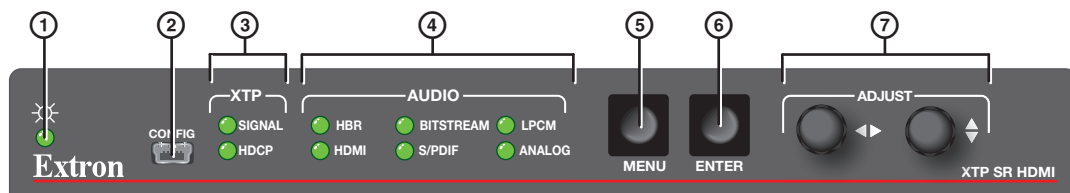


## Operation

### Front Panel Overview

After all transmitters and connected devices are connected and powered on, the system is fully operational. If any issues arise, verify that the cables are routed and connected properly.

**NOTE:** Use the Extron XTP System Configuration software or SIS commands to configure the XTP SR HDMI (for more details, see the *XTP SR HDMI User Guide* on the Extron website, [www.extron.com](http://www.extron.com)).



**Figure 1. Front Panel Features**

- ① **Power LED** — Lights on the front and rear panels when power is applied to the device.
- ② **Config port** — Connect a host device to the mini USB B port for device configuration, control, and firmware upgrades.
- ③ **XTP LED indicators** —
  - Signal LED** — Lights when an active XTP video signal is received.
  - HDCP LED** — Lights when the XTP input signal is encrypted.

#### ④ **Audio LED indicators** —

**HBR LED** — Lights when the embedded audio signal is high bit rate audio.

**Bitstream LED** — Lights when the embedded audio input signal is Dolby Digital, DTS audio format, and 2-ch Dolby.

**LPCM LED** — Lights when the embedded audio input signal is 2-channel LPCM.

**HDMI LED** — Lights when HDMI embedded audio output (HBR, bitstream, or LPCM) is enabled.

**S/PDIF LED** — Lights when S/PDIF audio output (multi-channel or LPCM) is enabled.

**Analog LED** — Lights when analog audio output is enabled.

#### ⑤ **Menu button** — Press this button to access and navigate the On-screen Display (OSD) menu system.

#### ⑥ **Enter button** — Press this button to select submenus and submenu items.

#### ⑦ **Adjustment knobs** — Rotate the horizontal and vertical knobs to navigate the On-screen Display menu and to adjust settings.

## Setting Front Panel Lockout Mode (Executive Mode)

The front panel security lock (executive mode) limits operation of the device from the front panel. While in executive mode, the XTP SR HDMI can still be configured with SIS commands and the XTP System Configuration Software. To enable or disable executive mode through the front panel, press and hold the Menu and Enter buttons simultaneously for 2 seconds or until the power LED blinks (see the *XTP SR HDMI User Guide* to enable or disable executive mode with Simple Instruction Set (SIS) commands or the XTP System Configuration Software).

## Setting HDMI Audio

The embedded audio on the HDMI output connector can be enabled or disabled by setting the HDMI audio switch next to the connector (see ⑤ on page 1). Move and hold the HDMI audio switch up (for about 1 second) to enable embedded audio on the display connected to the HDMI output connector or move and hold the HDMI audio switch down (for about 1 second) to disable it. The switch returns to the middle position after it has been released. The associated LED lights when the audio is enabled and remains unlit when audio is disabled.

## Configuring the XTP SR HDMI

The XTP SR HDMI can be configured through front panel controls and the On-screen Display (OSD) menu, Simple Instruction Set (SIS) commands, or the XTP System Configuration Software. To utilize SIS commands or access the XTP System Configuration Software, connect a host device to the XTP SR HDMI through the front panel Config port (see ② on page 2) or the rear panel Remote RS-232 connector (see ③ on page 1). The Config port supports SIS commands and the XTP System Configuration Software while the Remote RS-232 connector supports only SIS commands.

### On-screen Display (OSD) Menu System

The OSD menu consists of six submenus that can be accessed using the front panel Menu button. View the menu on a display connected to the HDMI output connector (see ⑤ on page 1). The submenus are:

- **Auto-Image** — Use this submenu to perform a one-time Auto-Image on the image. The image is centered and sized to fill the output screen.
- **Picture Control** — Use this submenu to adjust the horizontal and vertical position, horizontal and vertical size, brightness, contrast, and detail of the image.
- **User Presets** — Use this submenu to save or recall a user preset.
- **Input Configuration** — Use this submenu to view the total pixels and horizontal and vertical active pixels of the input signal.
- **Output Configuration** — Use this submenu to select an output rate from a list of common resolutions and refresh rates or view color space, color bit depth, and HDMI data settings (all three are set to Auto).
- **Advanced Configuration** — Use this submenu to apply a test pattern, enable or disable a blank screen, freeze the output, set the aspect ratio, or reset the receiver to factory default settings.

To adjust settings:

1. Press the Menu button to access the main menu.
2. Rotate either adjustment knob to navigate to a desired submenu.
3. Press the Enter button to access submenu items of a selected submenu.
4. Rotate either adjustment knob to navigate to a desired submenu item.
5. Press the Enter button to select a submenu item for adjustment.
6. As required, rotate the adjustment knobs or press the Enter button to adjust submenu items.
7. Press the Menu button to return to the list of submenus or exit the OSD menu.

### XTP Configuration Software

The XTP SR HDMI can be configured by the XTP System Configuration Software when it is installed on a connected host device, such as a PC, through the front panel USB port (see the *XTP SR HDMI User Guide* for more details).

## Upgrading Firmware

The onboard firmware of the XTP SR HDMI can be upgraded via the XTP System Configuration Software or the Extron Firmware Loader Program (available on the Extron website, [www.extron.com](http://www.extron.com)).

## Basic SIS Commands

The XTP SR HDMI can be configured with specific SIS commands via an RS-232 or USB connection. Use the Extron DataViewer utility or a control system to send SIS commands and receive responses. The following table identifies a selection of SIS commands (for a full list of SIS commands and variable definitions, see the *XTP SR HDMI User Guide*, available on the Extron website, [www.extron.com](http://www.extron.com)).

Command	ASCII Command (Host to Device)	Response (Device to Host)	Additional Description
<b>Input configuration</b>			
Execute Auto-Image	A	Img←	Execute a one time Auto-Image.
<b>Picture adjustments</b>			
Mute video	1B	Vmt1←	Mute video and display black video.
Unmute video	ØB	VmtØ←	Unmute the video.
<b>Output configuration</b>			
Set scaler output rate	[Esc]X31RATE←	RateX31←	Set the output resolution and refresh rate.
View scaler output rate	[Esc]RATE←	RateX31←	View the selected output resolution and refresh rate.
Set a test pattern	X11J	TstX11←	Set the test pattern to X11.
View the test pattern	J	TstX11←	View the current test pattern status.
<b>Audio configuration</b>			
Mute audio	3Z	Amt3←	Mute all audio outputs.
Unmute audio	ØZ	AmtØ←	Unmute all audio outputs.
Set volume level	X17V	VolX17←	Set the output volume to X17.
View volume level	V	VolX17←	View the current volume setting.
<b>Advanced configuration</b>			
Enable executive mode	1X	Exe1←	Lock the front panel.
Disable executive mode	ØX	ExeØ←	Unlock the front panel.
Set aspect ratio to Fill	[Esc]1ASPR←	Aspr1←	Set the input aspect ratio to fill the entire output screen.
Set aspect ratio to Follow	[Esc]2ASPR←	Aspr2←	Set the input aspect ratio to match the native value.
View aspect ratio setting	[Esc]ASPR←	AsprX23←	View the current aspect ratio setting.
<b>Reset</b>			
Reset to factory default	[Esc]ZXXX←	Zpx←	Resets all user settings back to factory defaults.

### NOTES:

X11 = Test pattern (Ø = off [default], 1 = crop, 2 = alternating pixels, 3 = crosshatch, 4 = color bars, 5 = grayscale)

X17 = Volume (Ø - 64, where 64 = default)

X23 = Input aspect ratio (1 = Fill [default], 2 = Follow)

X31 = Output scaler resolution and refresh rate (see the table below for a selection of resolutions and refresh rates or the *XTP SR HDMI User Guide* for a full list)

SIS Variable X31 for EDID or Output Resolution and Refresh Rate Combination (Where X31 = 10 through 90)									
Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz	70 Hz
1024x768						19		20	21
1280x800						31		32	33
1280x1024						34		35	36
1680x1050						57		58	
1920x1200						61		62	
720p			66	67	68	69	70	71*	
1080p	75	76	77	78	79	80	81	82	

\* = default

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